

ABSTRAK

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EFEKTIFITAS INSTALASI PENGOLAHAN AIR LIMBAH DI MASJID AL-AKBAR SURABAYA

xiv + 63 Halaman + 11 Tabel + 2 Gambar + 30 Lampiran

Indonesia ialah negara yang didominasi muslim terbesar di dunia. Menurut The Royal Islamic Strategic Studies Center (RISCC) kuantitas penganut agama islam di Indonesia sejumlah 237,56 juta jiwa maupun 86,7% dari jumlah penduduknya. Kebutuhan air bersih yang diperlukan guna berwudhu terus meningkat dan belum banyak sistem pengolahan limbah air wudhu. Maksud diadakannya penelitian berikut ialah guna menemukan efektifitas instalasi pengolahan air limbah di Masjid Al-Akbar Surabaya.

Jenis penelitian berikut ialah penelitian deskriptif, dilaksanakan secara *cross sectional*. Variabel yang diteliti yaitu kuantitas air bersih, kuantitas jamaah setiap hari, kualitas air limbah, dan peralatan dan sarana yang digunakan proses pengolahan air limbah. Teknik pengumpulan data yakni wawancara, observasi serta laboratorium. Sampel penelitian yaitu 14 sampel *effluent* IPAL. Analisa ata dilaksanakan secara deskriptif kualitatif serta kuantitatif sebagaimana Peraturan Menteri Lingkungan Hidup dan Kehutanan No. 68/2016.

Instalasi eskpansi air limbah di Masjid Al-Akbar Surabaya terdapat proses *pre-treatment* dengan bak pengumpul dan *primary treatment* dengan filtrasi zeolit *multiform*. Pencapaian uji laboratorium mutu *effluen* limbah cair dengan parameter Amonia, *Total Coliform* dan TSS melebihi baku mutu pada Hari Senin dan Jumat, sedangkan parameter BOD pada seluruh sampel melebihi baku mutu.

Simpulan akan penelitian berikut yakni instalasi pengolahan air limbah belum efektif menurunkan parameter Amonia, *Total Coliform*, BOD, dan TSS pada Hari Senin dan Jumat dikarenakan tidak terdapat tahap biologis dan desinfeksi. Saran untuk Masjid Al-Akbar Surabaya melakukan pemantauan dan evaluasi terhadap kualitas air limbah dan kinerja IPAL agar air limbah dapat diolah kembali.

Kata Kunci : Air bersih, Limbah domestik, Instalasi pengolahan air limbah

Daftar Pustaka : 5 Buku + 30 Jurnal + 1 Peraturan Menteri Lingkungan Hidup dan Kehutanan (2010-2023)

ABSTRACT

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EFFECTIVENESS OF WASTEWATER TREATMENT PLANT IN MASJID AL-AKBAR SURABAYA

xiv + 63 Pages + 11 Tables + 2 Figure + 30 Attachments

Indonesia is the largest Muslim-plethora state in the world. According to The Royal Islamic Strategic Studies Center (RISCC), the number of Muslims in Indonesia is approximately 237.56 million people or 86.7% of its population. The demand for clean water used in ablution (wudhu) is increasing, and there are not many wastewater treatment systems specifically designed for ablution water. Masjid Al-Akbar Surabaya has a wastewater treatment system called “Green Toilet”. The purposelley this research was to established the potency of wastewater treatment facility in Masjid Al-Akbar Surabaya.

This study was a representative learn organizes in a cross-sectional manner. The variables studied include quantity of clean water, the number of congregants per day, the quality of wastewater, and the equipment and facilities used in the wastewater treatment process. Data was accumulated thru debriefing, surveillance, and lab examine. The research sample consisted of 14 effluent samples from the wastewater treatment facility. Data analysis was conducted qualitatively and quantitatively, following the reference of Minister of Environment Forestry Regulation No. 68 of 2016.

The wastewater treatment facility in Masjid Al-Akbar Surabaya consists of a pre-treatment process with a collection tank and a primary treatment process using multi-form zeolite filtration. The laboratory tests revealed the grade of wastewater effluent exceeded the grade standards for parameters such as Ammonia, Total Coliform, BOD, and TSS on Mondays and Fridays, at the time there is an escalate the amount of congregants.

The inference this study was the wastewater treatment facility is not yet effective in reducing parameters such as Ammonia, Total Coliform, BOD, and TSS on Mondays and Fridays due to the absence of biological and disinfection stages. Recommendations for Masjid Al-Akbar Surabaya include monitoring and evaluating the grade of wastewater also performance the wastewater treatment facility to ensure that the wastewater can be properly treated.

Keywords : Clean water, Water waste, Water waste treatment instalation

Reading List : 5 Books + 30 Journals + 1 Regulation of the Minister of Environment dan Forestry (2010-2023)